

Patent Abstracts of Japan

PUBLICATION NUMBER : 10079623
PUBLICATION DATE : 24-03-98

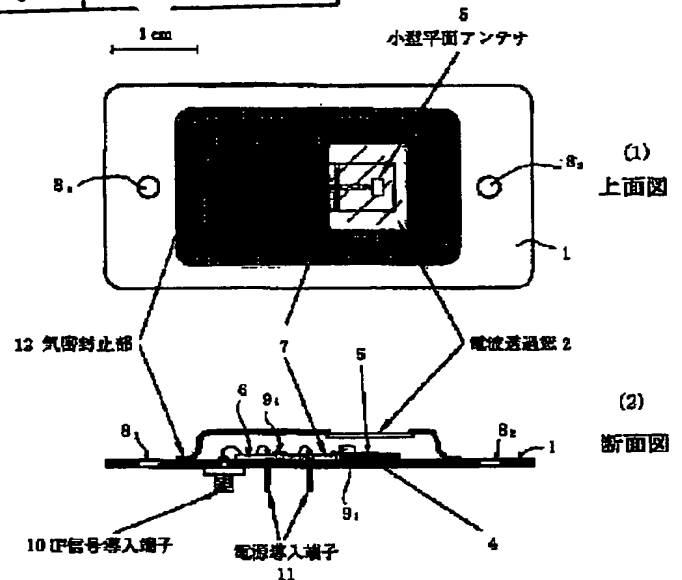
APPLICATION DATE : 02-09-96
APPLICATION NUMBER : 08231685

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INT.CL. : H01Q 23/00 H01L 27/00 H01Q 1/32
H01Q 13/08 H03H 9/02 H03H 9/10
H04B 1/18 H04B 1/26 H04B 1/38 //
H01L 27/01

TITLE : SEMICONDUCTOR MODULE
INCORPORATED WITH ANTENNA
ELEMENT



ABSTRACT : PROBLEM TO BE SOLVED: To provide a semiconductor module incorporated with an antenna element suitable for millimeter waves and quasi millimeter waves by providing a means for airtightly sealing the antenna element, an amplifier circuit and a frequency conversion circuit formed on the substrate in common space.

SOLUTION: An antenna element 5 is formed on a dielectric substrate 4 oppositely to an electromagnetic wave transmitting window 2 formed on a seal cover. A plane antenna such as patch antenna and a slot antenna is used for the element 5. Semiconductor integrated circuits 6, 7 on which a microwave circuit and a millimeter-wave or quasi millimeter wave circuit constituted of an amplifier circuit and a frequency conversion circuit are respective integrated are formed on another semiconductor substrate different from the substrate 4. The substrate and the substrate 4 are arranged on one common side a substrate 1. The seal cover consisting of a conductive material is welded or screwed with/into the substrate 1 on an airtight sealing part 12 formed on its peripheral part so as to be stuck to the substrate 1 to airtightly seal the substrate 1.

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